WILDLIFE MANAGEMENT AND RESEARCH NOTES

No.	Author	Date
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	Title: 2013 Spring Northern Bobwhite Whistle Count	

ABSTRACT: *Spring whistle counts have been conducted annually throughout Indiana since 1947 (except 1959-1975) to assess changes in bobwhite abundance. In 2013, 715 whistling bobwhites were counted along 80 routes. Data were only included in the analysis if routes were surveyed in both 2012 and 2013, and at least 1 quail was recorded in those years. Considering only these routes (n =71), the statewide average number of bobwhites heard per survey route in 2013 ($\bar{x}$ =9.99 ± 0.36) was significantly greater (P = 0.078) than the number heard in 2012 ($\bar{x}$ =8.56 ± 0.29). When we examined Bird Conservation Regions (BCR; Figure 1) in Indiana, we observed increases in all three regions (BCR 22: 26.1%; BCR 24: 14.9%; BCR 23: 8.3%), yet none were statistically significant , likely due to the smaller sample size.*

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The northern bobwhite is widely distributed throughout eastern North America and Mexico and is one of the most important game birds in the southern and mid-western United States. In Indiana, there are approximately 14,000 quail hunters that annually harvest over 20,000 birds. To monitor changes in the bird's annual abundance, the Indiana Division of Fish and Wildlife conducts roadside counts of whistling bobwhites each spring. Survey results are used to formulate management priorities, set harvest regulations, and evaluate habitat improvement programs.

METHODS

The Indiana Division of Fish and Wildlife conducts road-side counts of whistling bobwhites each spring to monitor changes in population abundance. These counts have been conducted annually since 1947 lapsing in the years between 1958 and 1976 due to personnel issues. Currently, 91 routes are established across 88 counties and are surveyed during the month of June. Observers record the number of quail heard whistling during 3 minute periods at 15 different stops along each route. The routes are 15 miles in length and listening stops are spaced at approximately 1-mile intervals along each route. Counts start at sunrise and are not conducted during precipitation events or when winds exceeded 12 mph. Only data from routes surveyed in both years where at least 1 quail was recorded were used to assess annual changes in the bobwhite breeding population. These data were used to draw statistical comparisons ($\bar{x}$ ± SD) between indices of male abundance from 2012 and 2013 through a paired t-test with significance at the 90% confidence level, both statewide and within each of three Bird Conservation Regions (BCR; Figure 1).

RESULTS

In 2013, a total of 80 established routes were surveyed in 77 counties between 9 June and 28 June. During 2012 and 2013, only 71 routes in 68 counties were conducted in both years and recorded at least 1 quail, and data from only these routes were used to draw statistical comparisons between indices of bobwhite abundance. Statewide, the average number of bobwhites heard per survey route in 2013 ($\bar{x}$ =9.99 ± 0.36) was significantly greater (P = 0.078) than the number heard in 2012 ($\bar{x}$ =8.56 ± 0.29; Table 1). When we examined Bird Conservation Regions (BCR; Figure 1) in Indiana, we observed increases in all three regions (Table 2). Between 2012 and 2013, BCR 23 (Prairie Hardwood Transition), covering a small portion of northern Indiana, saw a 8.3% increase; BCR 22 (Eastern

Tallgrass Prairie) covering most of central and northern Indiana, increased 26.1%; and BCR 24 (Central Hardwoods), Covering southern Indiana, increased 14.9%. However, all of the regional increases were statistically insignificant due to the small number of routes in each region.

DISCUSSION

The drought, though bad for most, was good for quail as they prefer coupled with two relatively mild winter of 2011-2012 and 2012-2013, it was expected that there would there would be statewide increases in population abundance from lows in 2010 and 2011. However, a wet spring and cool start to the summer could have a dampening effect on the fall population, though harvest numbers should still be better than the record lows of 2010.

Statewide, long-term trend data continues to show that the northern bobwhite population remains well below numbers observed in past decades in all three bird conservation regions (Figure 2). Increasing severe weather events and a continued loss of habitat, particularly the loss of quality winter cover, to farming and urban development will continue to stifle any possible rebound of the bobwhite population. Currently, little more than 265,000 acres of farmland are idle across the state through the Conservation Reserve Program (CRP), and this land is being reverted to farmland as contract expire and incentives cannot compete with high commodity prices. Indiana has had more than a 91% loss of potential game bird habitat when compared to the late 1960s and early 1970s.

Indiana landowners interested in creating bobwhite habitat can take advantage of a number of federal and state habitat conservation programs. For more information about federal programs, contact your local USDA service center or go to: **www.in.nrcs.usda.gov.**
The Indiana Division of Fish and Wildlife has programs that can provide landowners with support and funds to establish and/or maintain game bird habitat. These programs include the Wildlife Habitat Cost-Share Program, the Game Bird Habitat Development Program, and in designated pheasant priority areas, and the Quail Habitat Incentive Program. For additional information about these IDFW programs, contact your **local district biologist** or visit: **www.in.gov/dnr/fishwild/2352.htm**

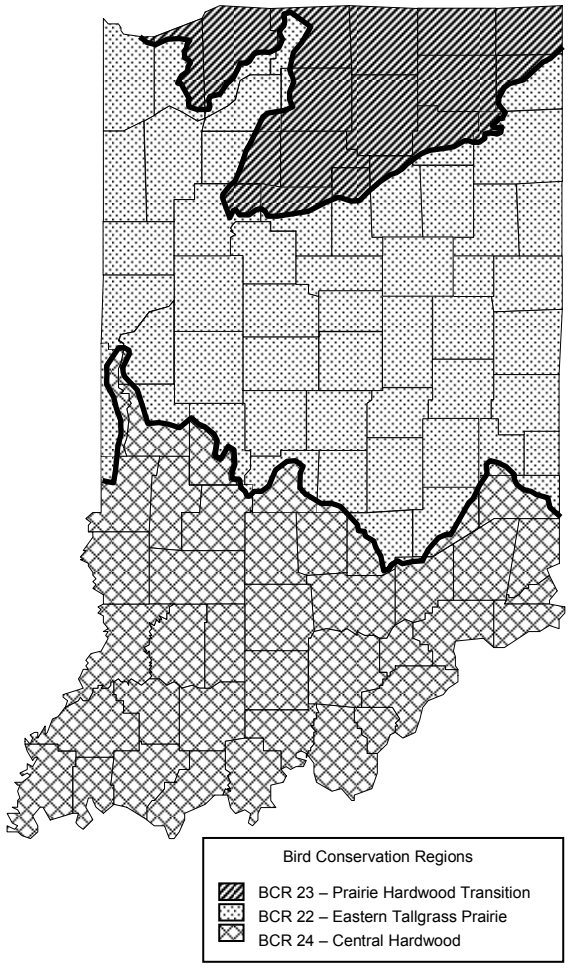

Figure 1. Map illustrating the 3 bird conservation regions (BCR) within the state of Indiana. BCR are ecologically defined units that provide a consistent spatial framework for bird conservation across North American landscapes under the North American Bird Conservation Initiative (Rich et al. 2004).

Table 1. Number of male northern bobwhites heard per route ($\bar{x}$ ± SD) along 71 paired survey routes within Indiana's three bird conservation regions, 2012-2013.

BCR Region	n^a	2012	2013	% Change	P^b	
Statewide	71	8.56 ± 0.28	9.99 ± 0.36	16.7%	0.08	*
BCR 22	35	3.17 ± 0.14	4.00 ± 0.21	26.1%	0.19	
BCR 23	4	6.00 ± 0.61	6.50 ± 0.39	8.3%	0.66	
BCR 24	32	14.78 ± 0.46	16.98 ± 0.62	14.9%	0.19	

[a] Includes only non-zero routes surveyed in both 2012 and 2013.

[b] *=P<0.10, **=P<0.05, ***=P<0.01. Significance was defined as P<0.10 in the 2-year comparison due to the low power of the test.

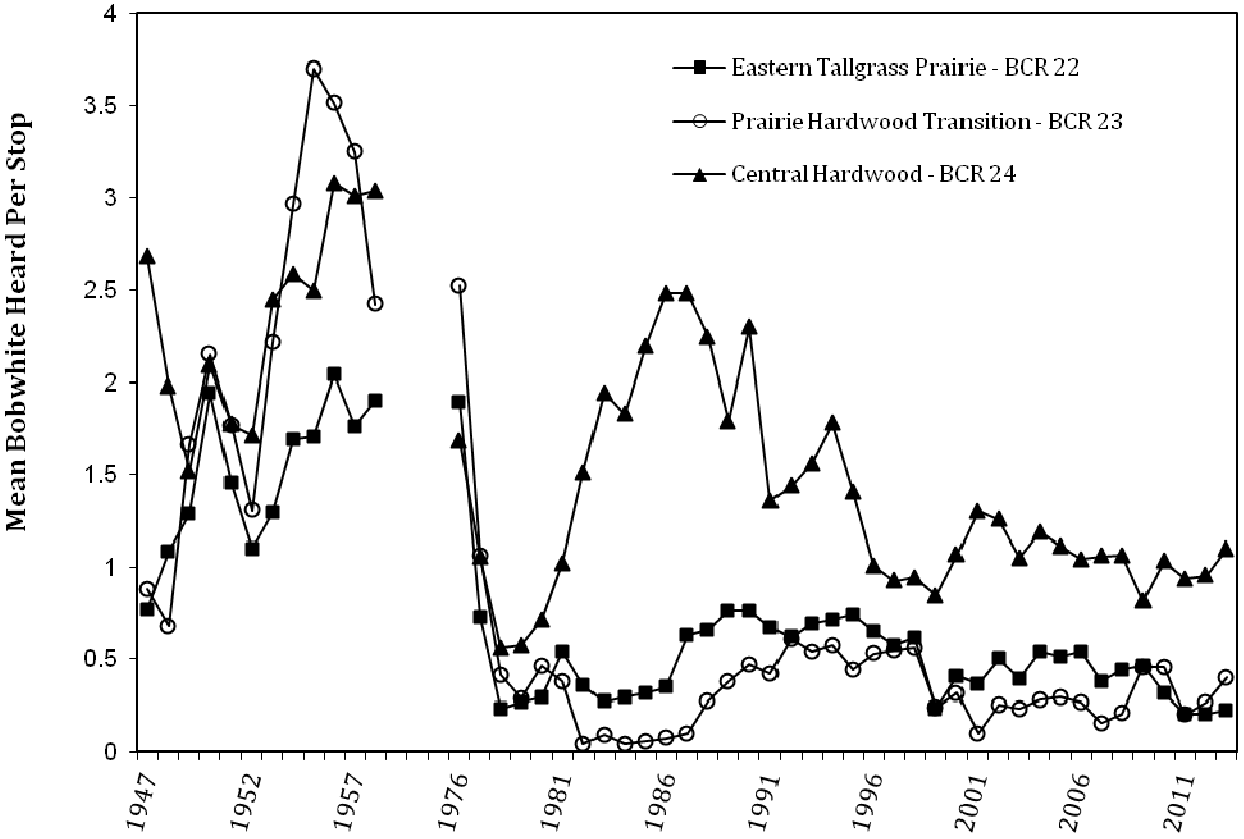

Figure 2. Mean number of northern bobwhite heard at each survey stop within Indiana's three bird conservation regions (BCR), 1947-2013. No surveys were conducted from 1959-1975. Unpaired zero routes were included.